## REMARKS

The Examiner is thanked for the Official Action of October 14, 2003. Currently, claims 1-13 are pending and were rejected by the Examiner in the office action. This request for reconsideration is intended to be fully responsive thereto.

### REJECTION UNDER 35 U.S.C. 102 (Hayashi et al.)

Examiner's Rejection Regarding Claims 1 and 3

Claims 1-5 were rejected under 35 U.S.C. 102(b) as being anticipated by Hayashi et al. (JP8-287951). Regarding Claims 1 and 3, the Examiner relied on the machine-translation of Hayashi et al. which allegedly teaches an electrode structure for an electrical component in which ions migrate between electrodes, e.g., a nonaqueous electrolyte secondary battery having an electrode active substance, such as vanadium oxide, coated with an ion-conducting polymer, such as polyaniline. Furthermore, Hayashi et al. is said to refer to the electrode active substance as "active material (2)" and the ion-conducting polymer as "active material (1)" and that the two active materials are mixed in solution and made to adhere to a current-collecting member, thereby obtaining "an electrode with a thickness of 45 micrometers".

Applicant's Analysis of Hayashi et al.

Conductivity of polyaniline as disclosed in Hayashi et al. relates to **electronic conductivity** and does **not relate to ion-conductivity**. See for example, A.G. MacDiarmid et al., Mol. Cryst.Liq.Cryst. (pages 121 and 173, 1985). Hayashi et al. utilizes an electronic-conductive material, such as polyaniline, as an active material. On the other hand, the present invention utilizes an ion-conductive material as a medium for ion migration.

Furthermore, in Hayashi et al., (1) the conductive material, such as polyaniline, and the active material, such as vanadium oxide, are mixed with and dispersed in a solvent; (2) this coating solution is applied/coated on a

current collecting member; and (3) the coating solution is dried out to form an electrode. Here, both polyaniline and vanadium oxide are used as active materials and are not used for ion-migration. Applicant's Explanation of the Present Invention

The present invention discloses a technology of coating a powdered electrode active substance with an ion-conducting polymer in order to produce an electrode structure where **ions migrate** effectively between electrodes. The ion-conducting material is positioned between the electrode structures for an electrical component, such as a battery or an electric double layer capacitor, so that ions migrate in the ion-conducting material in order to cause an electric flow between the electrodes.

By using the special coating of a powdered electrode active substance, the present invention eliminates problems that existed in the conventional arts such as decreased battery performance and other characteristics, electron-conducting properties, and other problems explained more fully between the second paragraph of page 2 and the first paragraph of page 4 in the current specification. The advantages specified in the specification appear only because ions migrate on the surface of the active materials and therefore if no ion migration occurs, as in Hayashi et al., no such advantages exist.

Examiner's Rejection Regarding Claim 5

Regarding Claim 5, an ion-conducting substance, such as the non-aqueous electrolyte, has a separator disposed therein. It is said that alternatively, Hayashi et al. discloses that a solid polymer electrolyte may be employed.

Following the same reasoning stated above, Claim 5 should overcome Examiner's rejection in the office action.

REJECTION UNDER 35 U.S.C. 102 (Bai et al.)

Examiner's Rejection Regarding Claims 1, 3 and 11

The Examiner rejected Claims 1-5 under 35 U.S.C. 102(b) as being

anticipated by Bai et al. (US5744258). The Examiner suggested that Bai et al. teaches a hybrid electrode structure for an electrical component in which ions migrate between electrodes having an electrode active substance, such as Li-intercalating carbon, inter alia, coated with a polymer such as polyaniline. The Examiner continued that the two active materials are combined and made to adhere to a current-collecting member.

Applicant's Analysis of Bai et al.

Again, just like Hayashi et al., all the polymers listed in Bai et al., such as polyaniline, do not involve ion-conductivity. Bai et al. encapsulates "high-rate material " such as polyaniline and "high-energy material" such as Li, both of which are used as active materials. Therefore, no ion migration occurs and none of the advantages of the present invention exist.

Examiner's Rejection Regarding Claim 5

The Examiner rejected Claim 5 under 35 U.S.C. 102(b) as being anticipated by Bai et al. (US5744258). The Examiner suggested that an ion-conducting substance such as the non-aqueous electrolyte has a separator disposed therein and that alternatively Bai et al. discloses that a solid polymer electrolyte may be employed.

Following the same reasoning stated above, Claim 5 should overcome Examiner's rejection in the office action.

Examiner's Rejection Regarding Claim 11

The Examiner rejected Claim 11 under 35 U.S.C. 102(b) as being anticipated by Bai et al. (US5744258). The Examiner suggested that Bai et al.'s hybrid electrical energy device has a double-layer with active materials and the high pulsed power of a capacitor.

Because of the same reasoning stated above, Claim 11 should overcome Examiner's rejection in the office action.

REJECTION UNDER 35 U.S.C. 103

(Hayashi et al., Bai et al., and Dahn et al.)

Examiner's Rejection Regarding Claims 1, 3 and 11

The Examiner stated that Claims 6-10 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over, Hayashi et al. as applied to Claims 1-5. Further, Claims 6-10 were rejected under 35 U.S.C. 103(a) as being unpatentable over Bai et al. as applied to Claims 1-5 and 11-13 above, in view of Dahn et al. (US4969254). The Examiner suggested that while Bai et al. does not explicitly teach press-sliding of the active material mixture, Dahn et al. teaches mixing of particulate material in preparation of an electrochemical cell including the steps of rolling, i.e., sliding of the substrate followed by subsequent pressing.

Applicant's Analysis of Cited References

The same argument is brought and stands with respect to the ion-conducting polymer. The prior art does not mention ion migration. Regarding the press-sliding, Dahn et al. the press-sliding process, as described in the present-invention, is not disclosed or suggested. Instead, Dahn et al. merely states that a mixing operation wherein a binder and an electrochemically active particulate material are dispersed in a solvent to form a slurry. Dahn's description (col.47 line 47 seq.) such as the steps of rolling, i.e. sliding of the substrate followed by the subsequent pressing explains how to prepare a continuous layer and how to control the thickness of the layer. No indication or suggestion as to press sliding and stirring the mixture in a container in order to coat the ion conducting polymer on the surface of the active materials can be seen in Dahn et al.

CONCLUSION

No cited reference discloses or suggests ion migration, which is the basis of the present application, to overcome the existing problems and to provide advantages. Further, the mixing process of Dahn et al. is totally different from the press-sliding of the present invention. Therefore, neither of the cited references nor any combination of the same will bring the skilled person in the art to reach the present invention.

Accordingly, it is respectfully submitted that claims 1-13 define the invention over the prior arts and notice to this effect is respectfully solicited.

Should Examiner believe further discussion regarding the above claimed language would expedite prosecution they are invited to contact the undersigned at the number listed below.

Respectfully submitted,

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